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Star Wars: CIA reports Soviet gains

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WASHINGTON — Soviet space weapons research closely parallels the American "Star Wars" program and began "well before" President Reagan announced the U.S. effort in March 1983, according to a Central Intelligence Agency appraisal.

Soviet researchers are said to enjoy a competitive edge in some technologies related to space-based weapons, particularly in basic laser research. But the study concludes that the Soviets are merely "on a par" with the United States in laser weapons, because of U.S. superiority in computers, microelectronics, command and control systems, optics and sensors.

A more optimistic finding, based on the same intelligence reports and released last week by Congress' Office of Technology Assessment, concluded that the United States "clearly remains ahead of the Soviet Union" in space-based weaponry.

In either case, if the intelligence reports are accurate, the Soviet Union is working on elements of the same space weapons technology that the United States is proposing to incorporate into the Star Wars program.

The Soviets have attacked the Star Wars program of space-based missile defenses as provocative and unnecessary. The unclassified CIA working paper has been widely used in congressional briefings and administration speeches to promote the U.S. effort and undermine the Soviet criticisms.

Despite their partisanship, U.S. appraisals of Soviet preparations for space combat constitute the only information available on the topic. Soviet military literature has not publicly discussed space weaponry since 1967, when the two superpowers signed an Outer Space Treaty prohibiting the use of nuclear weapons in space.

Soviet strengths

In making its case, the CIA report cites the following Soviet capabilities and developments:

- Since 1964, when U.S. and Soviet scientists shared a Nobel Prize for laser research, the Soviet Union has invested heavily in lasers, including at least three varieties the United States considers promising for weapons applications. Some laser research facilities are located at the Sary Shagan missile test center in Central Asia, site of much secret Soviet anti-ballistic missile research, according to the CIA.
- One facility in particular at Sary Shagan causes great concern — a ground-based laser station capable of shooting a laser beam into space. Such a ground-generated beam, in the U.S. Star Wars plan, could be reflected off an orbiting mirror toward targets on earth or at ICBM warheads in flight.
- The huge electrical energy needed to generate a powerful laser beam is the main reason for utilizing a ground-based generator and mirror. One alternative is a powerful space-borne generator. According to the CIA study, Soviet researchers have developed a compact, rocket-powered generator that is "the largest in the world" with no Western counterpart.
- Lifting such a generator, or any space-based system, into orbit would require a powerful rocket. The CIA claims the Soviet Union is developing a rocket capable of putting a 400,000-pound object into orbit. The biggest U.S. payload is 65,000 pounds, shuttle-borne.
- Aiming a laser beam while tracking enemy satellites or warheads requires large, perfectly ground mirrors. The Soviet Union produced a sophisticated, 1.2-meter mirror in 1978 as part of a satellite-borne astrophysical telescope. It was described then by the Soviets as the prototype for a future 25-meter mirror.
- Particle-beam weapons, capable of shooting electrons or atoms at targets, have been a Soviet research priority since 1970, according to the CIA. The research includes one form of particle beam, utilizing neutral particles that are useless within the earth's gravitational field and ideal for space weaponry.
- The Soviet Union already has deployed an orbiting, anti-satellite weapon designed to fire a small explosive charge as it nears the target, according to the CIA study. The Soviet Union also has gone much further than the United States in ground-based ballistic missile defenses involving radar warning and tracking systems and fast-accelerating interceptor missiles.

What all these Soviet developments add up to is confusing, even within the government. For example, while the CIA predicts an orbiting Soviet anti-satellite laser by the mid-1990s, the Defense Intelligence Agency, examining the same intelligence data for the Pentagon, predicts such a system by the late 1980s. Similar discrepancies exist, with the DIA more pessimistic than the CIA in each instance on most assessments of Soviet Star Wars technology.

Much speculation

Clearly, some of these estimates are highly speculative. CIA projections of Soviet laser research growth, for example, are based on estimates of research laboratory floor space allotted to the activity.

Also, while both the Soviet Union and the United States are thought to have spent about $1 billion on laser weapons research in 1985, the bang-for-the-buck may be dramatically reduced for the Soviet Union, according to physicist Roger Main, a sales representative in the Soviet Union from 1971 to 1979 for a U.S. laser firm.

"Virtually nothing which they need for their work is available on the market, and they will have to make everything in-house," Main wrote in an assessment of Soviet laser research published recently in Defense Systems Review. The result, Main concluded, is that "probably only 10 percent of the total staff will be able to do actual productive scientific work, and that not at the pace they would like, because of the delays in obtaining needed equipment."

Even the Reagan administration's Star Wars enthusiasts have trouble with the vagueness of data on Soviet space weapons research. Count the qualifiers, for example, in this recent statement by Paul Nitze, arms control adviser to the president and secretary of State:

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